Florida Atlantic University
Department of Exercise Science & Health Promotion
Exercise Testing Lab
PET 4550L
Summer 2009
Class time: F 11:00am – 1:00pm or F 2:00pm – 4:00pm
Location: GY 152
Instructor: Nina Markil
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Course Prerequisites:
Anatomy and Physiology 1 with lab (BSC 2085, BSC 2085L); Anatomy and Physiology 2 with lab (BSC 2086, BSC 2086L); General Chemistry with lab (CHM 2045, CHM 2045L) and Exercise Physiology PET 4351 and Lab PET 4351L.

Required Text:
Exercise Physiology Laboratory Manual, 3rd Edition. Gene M. Adams. Boston, MA: WCB McGraw-Hill, 1998. ISBN# 0-697-29500-1.

Course description:
The application of physiological principles in the evaluation of health and performance related fitness. Methods and protocols to measure cardiovascular, respiratory, muscular strength, power, and/or endurance as well as flexibility and body composition are addressed as well as the interpretation of test results.

Course objectives:
Upon completion of this course, students will demonstrate the ability to safely and professionally administer and interpret tests of :

- aerobic fitness using submaximal and maximal protocols using different modes of exercise
- lactate and ventilatory threshold with emphasis on endurance performance
- ECG in conjunction with a graded exercise test
- body composition
- muscular strength and power
- muscle flexibility

Recommended Software Competencies:

Microsoft Word or WordPerfect (report preparation).

Microsoft Excel (graphing and charting capabilities, basic statistical functions).

Microsoft PowerPoint (graphing, charting, and illustrating capabilities).

Course Requirements:

Attendance
Students **must** attend all labs. This is mandatory due to the participatory nature of this class. If you cannot make it to lab, please call or e-mail ahead of time. Medical or family emergencies and deaths will only be excused with written medical documentation or other documents.
Labs start promptly on time, so make sure to arrive on time. Lab report grades will reflect participation. If you are late, one (1) point will be deducted from your participation grade.
Remember to **dress for exercise**. If you do not dress appropriately for exercise, you will not receive the full 25 points for participation.

Lab Reports
Each week we will perform a lab (see lab schedule for specific lab dates). The corresponding lab report will be due **at the start of class** the following week unless otherwise specified.
Each Lab Report **(Text Only)** needs to be turned into **BLACKBOARD**, under **Submit Lab**, and submitted in the appropriate lab listing. Only one submission will be accepted per person. A copy of your lab including all graphs and tables needs to be handed in prior to the start of class as well. You will be graded on the lab handed in and receive points for submitting it to blackboard.
You cannot receive full credit for a lab unless it is both handed in and turned into Blackboard.
If you DID NOT attend a lab, you will not receive the points for the corresponding lab report.
Late reports will NOT be accepted.
Although most labs will be performed in groups, each individual is responsible for a separate lab report. This means each person's lab report **must be written in his/her own words**. The reports must be **typed and double-spaced**. All graphs must be computer-generated. Photocopies will NOT be accepted. See the sample lab format for details and specifics for each lab write-up.

Grading:
Lab reports: (labs at 25 points each) 250 points
Written Exams: (labs prior to midterm exam) 100 points
Practical Exam: 125 points
Participation: (including appropriate attire) 25 Points
Total: 500 points

Grading scale:
A = 93 – 100%
A- = 90 – 92.99%
B+ = 87 – 89.99%
B = 83 – 86.99%
B- = 80 – 82.99%
C+ = 77 – 79.99%
C = 73 – 76.99%
C- = 70 – 72.99%
D+ = 67 – 69.99%
D = 63 – 66.99%
D- = 60 – 62.99%
F = <60

Lab safety guidelines:
1. Never use any equipment unless you are thoroughly versed in the method of operation.
2. Lab equipment is expensive. Do not use any equipment unless instructed to do so.
3. Subjects performing on the treadmill and ergometer are to be **supervised at all times**.
4. Use protective gloves when handling and /or coming into contact with any bodily fluids.
5. No eating or drinking in the lab
6. **Clean** the equipment and the lab area when you are done.

General information:
A good grade is attainable in this class by reading the lab packet prior to class, by attending all labs, and by actively participating. Success in the lab will also help your understanding of the lecture material.

Cheating policy:
Turn-it-in through Blackboard – Each lab that is submitted through Blackboard will automatically be checked for plagiarism. This process will identify any copied material from the online directory and all other student papers.
If caught cheating or plagiarizing on the lab reports (even partially), you will receive a score of zero (0) for that lab. All cheating incidents will be reported to the Head of the Department and may result in a note on your permanent transcript. Again, you may discuss a lab but your report must reflect your own words.

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton - SU 133 (561-297-3880), in Davie - MOD I (954-236-1222), in Jupiter - SR 117 (561-799-8585), or at the Treasure Coast - CO 128 (772-873-3305), and follow all OSD procedures.

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value
on personal integrity and individual responsibility. Harsh penalties are associated
with academic dishonesty. For more information, see
http://www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

Tentative Schedule

Week 1 Submaximal exercise testing
Week 2 Maximal Exercise Testing & Measuring lactate and ventilatory thresholds
Week 3 Exercise ECG
Week 5 Exam 1
Week 6 Body Composition Assessment
Week 7 Body Composition Assessment
Week 8 Strength Testing and tests of muscular/anaerobic power
Week 9 Flexibility assessment
Week 10 Exam 2/ practice session for Practical Exam
Week 11 Practical Exam
Week 12 Practical Exam

Sample Lab Format

All labs should be typed, double-spaced, and written with minimal usage of pronouns except in the conclusion. All writing, charts, graphs, and tables must be computer-generated.

Cover sheet: Includes the title of the lab, the investigator (that's you), the date, instructor's name, etc.

Introduction: A brief introduction into the background and purposes of the experiment. General description of the usefulness and potential or actual applications of the laboratory procedure in the study of Exercise Physiology and human performance. What is the purpose of the lab? What are you trying to prove, observe, discover, etc?

Methods: The procedure you used to do the lab. It should be reproducible by other investigators. Include all equipment and materials used for the lab. Participation helps in answering that question. Bulleting or number is unacceptable; the text should flow in paragraph form.

Results: List all lab data pertinent to the lab exercise. This may include data tables, graphs, and all calculations required for the lab. Make sure to use all of the appropriate measurement units.

Remember to explain all results and refer to them in your conclusion.

Discussion questions: Each assignment has a series of questions that should be addressed in this section. Answer each question in complete sentences and proper English. Make sure each answered question is numbered and easy to understand. You do not have to restate the question. Some questions may require a small amount of research (e.g. exercise physiology books) while some may ask for an educated opinion. The results of the experiment should be used in answering the questions and the purposes of the study

Conclusion: Summarize the lab, what conclusion can be made regarding the results? Did you achieve the purpose of the lab? Briefly discuss any difficulties and problems encountered during the laboratory that could have compromised data accuracy; and interpretation of the numerical results in light of published norms whenever possible (e.g., maximal oxygen uptake of your subject compared to age-matched norms). References to published research in which techniques were evaluated or used to collect data are encouraged. Make a few insightful statements about the lab, or suggestions/questions you have about the lab.

Grade components:

Blackboard submission: 5 points

Neatness/grammar/spelling: 2 points

Cover sheet: 1 point

Introduction: 1 point

Methods: 2 points

Results: 4 points

Discussion questions: 6 points

Conclusion: 4 point

Total: 25 points

Bibliography

1) ACSM Guidelines for Exercise Testing and Prescription. 7th edition. Baltimore, MD: Lippincott, Williams, and Wilkins, 2000.

2) Health Fitness Instructor's Handbook. 4th edition. Champaign, IL: Human Kinetics, 2003

3) Rapid Interpretation of EKG's. 6th edition. Author: Dale Dubin; Tampa, FL: Cover Publishing, 2000.

4) Cardiac Rehabilitation, Adult Fitness, and Exercise Testing. 3rd edition. Baltimore, MD: Williams and Wilkins, 1995. ISBN # 0-683-03031-0

5) Exercise Testing and Exercise Prescription for Special Cases. 2nd edition. Philadelphia, PA: Lea and Febiger, 1993. ISBN # 0-8121-1440-X

6) Essentials of Strength Training and Conditioning. 2nd edition. Champaign, IL: Human Kinetics, 2000. ISBN # 0-7360-0089-5

7) Stress Testing: Principles and Practice. 4th edition. Philadelphia, PA: F. A. Davis Co., 1996. ISBN # 0-8036-0055-0.

8) Essentials of Cardiopulmonary Exercise Testing. Champaign, IL: Human Kinetics, 1996. ISBN # 0-87322-636-4

9) Exercise and the Heart. 4th edition. Philadelphia, PA: W. B. Saunders, 2000. ISBN # 0-7216-8450-5.

10) Clinical Electrocardiography – A Simplified Approach. 6th edition. St. Louis, MO: Mosby Inc., 1999. ISBN # 0-323-00252-8.

11) Clinical Electrocardiography: PreTest Self-Assessment and Review. New York, NY: McGraw Hill, Inc., 1994. ISBN # 0-07-052008-9